

ABSTRACT

apparatus and method for blood oxygenation are provided. The apparatus includes a chamber having a first inlet to receive a fluid, e.g., physiologic saline; a second inlet to receive a gas, e.g., oxygen, from a gas supply; and an outlet coupled to a capillary assembly. An atomizer nozzle coupled to the first inlet creates within the chamber fine droplets of fluid into which the gas diffuses to create a gas-supersaturated fluid, which is removed via the outlet. The removed gas-supersaturated fluid mixes with blood within a liquid-to-liquid oxygenation assembly to form oxygenated blood for delivery to a patient. Alternately, the blood may be provided by a pump to a high pressure hollow fiber or other type membrane oxygenator within which oxygen diffuses across the membrane(s) and into the blood to form oxygenated blood, again for delivery to a patient or other site.